

Baudrate Divider Calculator for AVR Micros

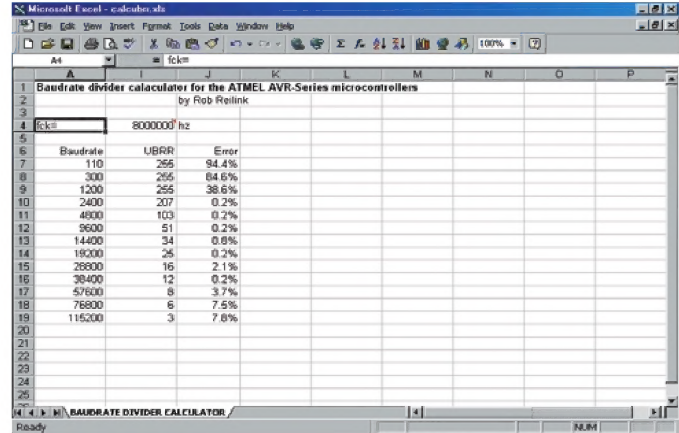
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An Excel spreadsheet is an extremely useful tool when you need to calculate a value to be loaded in the UBRR register of an Atmel AVR microcontroller. As most AVR programmers will know, these values depend on the crystal frequency used because they are derived from it. Without such a spreadsheet, such calculations are tedious.

A Microsoft Excel spreadsheet called **calcubrr.xls** was developed for this purpose. It may be downloaded as file number **000167-11** from the Free Downloads section on the Elektor Electronics website, www.elektor-electronics.co.uk. Look under July/August 2001 items.

(000167-11)



The screenshot shows a Microsoft Excel spreadsheet titled "Baudrate divider calculator for the ATMEL AVR-Series microcontrollers" by Rob Reilink. The spreadsheet has a menu bar (File, Edit, View, Insert, Format, Tools, Data, Window, Help) and a toolbar. The main data is in columns A, B, and C. Column A is labeled "Baudrate", column B is labeled "UBRR", and column C is labeled "Error". The first row of data (row 6) shows a baud rate of 110, a UBRR value of 255, and an error of 94.4%. The second row (row 7) shows a baud rate of 300, a UBRR value of 255, and an error of 84.6%. The third row (row 8) shows a baud rate of 1200, a UBRR value of 255, and an error of 38.6%. The fourth row (row 9) shows a baud rate of 2400, a UBRR value of 207, and an error of 0.2%. The fifth row (row 10) shows a baud rate of 4800, a UBRR value of 103, and an error of 0.2%. The sixth row (row 11) shows a baud rate of 9600, a UBRR value of 51, and an error of 0.2%. The seventh row (row 12) shows a baud rate of 14400, a UBRR value of 34, and an error of 0.8%. The eighth row (row 13) shows a baud rate of 19200, a UBRR value of 25, and an error of 0.2%. The ninth row (row 14) shows a baud rate of 28800, a UBRR value of 16, and an error of 2.1%. The tenth row (row 15) shows a baud rate of 38400, a UBRR value of 12, and an error of 0.2%. The eleventh row (row 16) shows a baud rate of 57600, a UBRR value of 8, and an error of 3.7%. The twelfth row (row 17) shows a baud rate of 76800, a UBRR value of 6, and an error of 7.5%. The thirteenth row (row 18) shows a baud rate of 115200, a UBRR value of 3, and an error of 7.8%.

Baudrate	UBRR	Error
110	255	94.4%
300	255	84.6%
1200	255	38.6%
2400	207	0.2%
4800	103	0.2%
9600	51	0.2%
14400	34	0.8%
19200	25	0.2%
28800	16	2.1%
38400	12	0.2%
57600	8	3.7%
76800	6	7.5%
115200	3	7.8%